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HEADQUARTERS

ENGINEERING & CONSTRUCTION NEWS

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SEPTEMBER'S THEME:

Engineering & Construction Technical Policy Branch

DWIGHT'S NOTES

The theme for this issue is "Engineering and Construction -- Technical Policy Branch". This is the second of six issues addressing the reorganized Engineering and Construction Division. The purpose of the theme article in these issues is to acquaint the field for the new structure of the division and the functions of each branch in the division. The new Technical Policy Branch has a lot of responsibility and potential. The branch is responsible for the process by which all civil works and military programs technical criteria is prepared as well as the proponentcy for the lion's share of the engineering, construction and environmental technical policy of the Corps. Over time the branch will help consolidate criteria among programs/missions and among the Services so HQ speaks with one technical policy voice. The branch will also concentrate on our relationships with industry groups and professional societies, a charge I've placed on all E&C employees.

The move of the Headquarters to 441 "G" Street (the General Accounting Office (GAO) Building) started out real smooth; however, the strike by the unions working for the local telephone company, Verizon, caused a number of delays. There were also a number of telephone and network problems that occur in the Pulaski Building with our people, who did not move to the GAO Building. The ten E&C people assigned to the GAO are situated now and fully employed. The remaining 60 E&C employees are still in the Pulaski Building until the Kingman renovation is finished.

I visited the Kingman Building earlier this month. The contractor is making good progress. Dry wall construction is going on now. Interior finishes will be very nice. The contractor should meet the 1 November completion date. We're working on the logistics for the move itself.

I encourage all members of the Engineering and Construction team in the Corps to share lessons learned through out the year. This publication provides a good media for sharing such information. In addition, when you see good information on the Internet or in magazine articles, bring that information to the attention of your peers. One such article worth reading is the NASA QA Story, which is on the Government Executive's website this month. The article is entitled "Midcourse Correction" and is an in-depth story about NASA mission failures caused in-part by going too far with its "faster, better, cheaper" philosophy in the 1990s. There are some good lessons learned in this article, which addresses ISO 9000 type standards. The link to the article is <http://www.govexec.com/features/0900/0900s2.htm>

DWIGHT'S NOTES (CONTINUED)

This month Engineering and Construction Division started development of a learning plan for the personnel in the division. The purpose of this plan is to keep the skills of the staff at HQUSACE current. I want to create a learning environment within E&C that will keep the entire team at the top of its game. A copy of the briefing for the Learning plan is available at

http://www.usace.army.mil/inet/functions/cw/cecwe/learning_plan_brief.ppt. One of the individuals on my staff provided the following information concerning some free courses. "I know that my state - Minnesota - is starting to require P.E.'s to participate in a continuing education process (like our inservice training for the police department). FEMA offers several independent study courses (for college credit) that would also be useful for the Corps (emergency response for disasters). Their web site is: <http://www.fema.gov/emi/train.htm>." The FEMA Emergency Management Institute offers a number of courses that will benefit you and your personnel.

On this some time, the USACE-wide Registry of Skills (RoS) is now on line. I encourage you to read the article in the issue ([USACE-Wide Registry of Skills \(RoS\)](#)) and to review the RoS on line at <http://ros.usace.army.mil:1096>. The supervisors need to take the lead by entering your personnel data into the registry and then encouraging your personnel to post their data. Also, remember that the RoS is for all Corps team members; not just the engineering and construction personnel. After you have had an opportunity to view the RoS, I would appreciate your comments on the system.

The Senate committee held a hearing on 14 September on the nomination of MG Flowers to be Chief of Engineers. MG Flowers statement before the Senate Environment and Public Works Committee is available at http://www.senate.gov/~epw/flo_0914.htm. From the published reports about the hearing (see <http://www.washingtonpost.com/wp-dyn/articles/A7645-2000Sep14.html>), barring some unknown circumstances, General Flowers should be confirmed as the 50th Chief of Engineers before Congress adjourns this fall.

Essayons,
Dwight

(Editors' note: If you want to share your thoughts with our readers regarding Dwight's Notes send an email to the E&C News editor (charles.pearre@usace.army.mil). A synopsis of your comments will be published in the next issue.)

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Engineering & Construction

Technical Policy Branch

TECHNICAL POLICY BRANCH, ENGINEERING AND CONSTRUCTION DIVISION

The Engineering and Construction Division was recently re-organized to make the division more relevant to the Project Management Business Process (PMBP) which is the USACE corporate process that establishes a team approach dedicated to the goals of effective and efficient quality project delivery. The Technical Policy Branch is a key element of the new E&C Division and is headed by **Mr. Hari Singh**. It consists of three teams: the Engineering Team, the Construction Team, and the Environmental Team. This Branch supports the PMBP by keeping design and construction criteria and guidance state-of-the-art and inserting the environmental focus of the Corps into that guidance for both for Military and Civil Works projects. It also develops technical policy and programs to assist Army customers to operate and maintain their existing facilities. Its other functions are providing technical policy on architect-engineer contracting, construction contracting, providing technical consultation, and transferring technology from research and industry to the Corps of Engineers. It also develop policy on professional registration, design and Construction partnering, design-build technical criteria and unified (tri-service) criteria development. It serves as proponent for various centers of expertise, and oversees the training of design and construction engineers. The following paragraphs describe specific functions of each team in the Technology Policy Branch, and the roles they play in PMBP.

Engineering Team: The Engineering Team consists of seven engineers and one architect with **Mr. Joe McCarty** as Team Leader. The goal of this team is to provide engineering policy and design tools

that will assist our major support commands and Project Delivery Teams (PDT) at the districts to provide our military and civilian customers, the best facilities that can be provided. Another goal is to provide programs that will assist our customers in the operations and maintenance of those facilities. This team is responsible for engineering and design policy in the mechanical, electrical, electronic, and fire-protection engineering areas. The team is also responsible for managing the entire USACE criteria and standards document program and for the policy on architect-engineer contracting.

This policy and criteria are implemented through engineering regulations, technical manuals, military handbooks, technical letters, unified facility criteria, and guide specifications. Programs and technical areas of responsibility include sustainable design, army energy program, electronic security and surveillance, life safety and fire protection, HVAC, plumbing, boilers, elevators, cranes, natural gas distribution, centralized heating and cooling, telephone and communications systems, power and lighting systems, mechanical and electrical designs of navigational locks, flood control pumping stations, spillways, etc.

In addition, the team is responsible for managing the criteria and standards document program for other branches of the Division. The team is also in charge of the DrChecks, which is a design review, lessons-learned and feedback system, USACE metrification program, and SPECINTACT, which is the automatic specification editing system used by our districts. Team members provide consultation to the field to resolve unique and difficult engineering and construction problems, oversee technical training of the Corps' mechanical, electrical and fire protection engineers, are proponents for numerous centers of expertise, are responsible for technology transfer from research and industry developments, develop concepts for innovative R&D projects, and monitor the progress of the labs that perform the work. The team is also responsible for other engineering policy areas, such as professional registration, design partnering, design-build technical criteria, and unified (tri-service) criteria development.

Construction Team: The Construction Policy Team is a multifaceted team of eight personnel with **Mr. Robert Chesi** as team leader. The team is set up to support the major roles of the Offices of the DCG for Civil Works and Military Programs as well as Project Delivery Teams at HQUSACE and the districts. These roles include technical oversight, technical policy and guidance development and national interface for both technical and industry organizations in the area of construction. As a national interface, the team meets at a national level with the AGC, ABC, ASCE, CII, USCOLD, DBIA and others. Within the technical policy and guidance area the team is responsible for revising and updating construction related regulation & guidance documents, Construction Bulletins, DCAF's, etc. This team is also instrumental in advising the staff and field on issues relating to Contract Administration, DAWIA, Quality Assurance, Construction Safety, Innovative Construction Methods, related R&D efforts, and other related construction issues. The team is directly involved in administering various construction award programs such as Contractor of the Year, HardHat and Construction Management in Excellence. The team is the functional proponent for development of RMS and continued use of CCASS. The team also is the proponent for construction related Prospect courses, various partnering initiatives and is an active member of the EFARS committee.

Environmental Team: The Environmental Team adds a new dimension to the Engineering and Construction Division. The team concentrates on technical environmental policy and technologies involved in planning, developing and executing all aspects of Civil Works and Military Programs worldwide design and construction missions. The team develops USACE policy and procedures for all facets of environmental protection, restoration and compliance, determines the adaptability of new

techniques and technologies to USACE operations, and approves further development and experimental improvement of USACE programs. Subject matter ranges from Brownfield clean ups to unexploded ordnance response to ecosystem restoration. Products include guide specifications, design guidance, Engineer Pamphlets, Engineer Manuals and Engineer Technical Letters.

The Environmental Team is a six-person operation with **Mr. Jim Wolcott** as team leader. Its staff formerly served in Civil Works Engineering and Operations Divisions, and Military Programs Engineering and Environmental Divisions. Forming a single, multi-discipline environmental team serving both Civil Works and Military Programs, combined with the Project Management Business Process, enables USACE to leverage experience and expertise from both programs. This is especially promising in terms of advancing emerging missions like ecosystem restoration, and in applying innovative technology across both Civil and Military programs. The cross-organizational nature of the Environmental Teams' work is well suited to the Project Management Business Process.

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District of the Month

FORT WORTH CITY DISTRICT

The Fort Worth District was established in 1950 after disastrous floods in the area. It is responsible for water resources development in two-thirds of Texas and military design and construction in Texas and parts of Louisiana and New Mexico, employing approximately 900 people. The engineering and construction functions were combined into a single entity during the restructuring initiative of February 1997. Currently, 275 very dedicated and capable team members are welded into a cohesive Engineering and Construction Division.

The Fort Worth District manages one of the largest military construction programs in the Corps of Engineers and supports customers with design and construction projects at 17 active Army and Air Force installations in Texas, New Mexico and Louisiana.

On the civil works side, the district manages numerous civil works programs, including flood control, water supply, recreation, fish and wildlife management and environmental restoration and stewardship. Its 25 reservoirs provide 35 percent of Texas' water supply and have prevented billions of dollars in flood damage since their construction, a benefit-to-cost ratio of 8.2 to 1.

In addition to its military and civil missions, more and more federal agencies, such as the Bureau of Prisons, the Federal Aviation Administration and the Drug Enforcement Administration, are recognizing the expertise available under the district's Support for Others program for design, construction, contracting, planning, environmental and other services. An example of this program is the district's role as the national account manager for the Immigration and Naturalization Service (INS) for planning, design and construction activities across the United States. The account manager resides in the Fort Worth District and manages an annual multi-million dollar program executed by numerous districts.

As the Environmental Compliance Assessment System district for the Southwestern Division, Fort Worth District assists Army, Army Reserve and National Guard installations with environmental

assessments of their operations. The district serves as project manager and executes environmental remedial actions at active military installations for the Installation Restoration and Base Realignment and Closure programs.

The District has five construction area offices, each with a distinct geographical area of responsibility.

The Fort Worth District's Southwestern Area Office primarily manages the military construction program on White Sands Missile Range (WSMR), the nation's only inland test range, and Fort Bliss, Texas, home to the Army's Air Defense Artillery Center and School, Sergeants Major Academy, William Beaumont Army Medical Center, Biggs Army Air Field and the German Air Force Air Defense School.



Fort Bliss Whole Barracks
Revitalization

The Southwestern Area Office recently completed construction of the \$18 million **Cox Range Control Center**, a state-of-the-art control center designed to monitor launches associated with the research, testing and development of various defense systems at WSMR, and the \$44.8 million **Whole Barracks Revitalization Project**. The barracks project, designed by the district's in-house staff using the Army's 1+1 standard, is composed of three barracks buildings, three administrative buildings, a 1,300-person dining facility and a central energy plant.

Construction of the barracks facility was completed ahead of schedule and within budget through the use of a very successful formal partnering agreement between representatives of the Fort Worth District, Fort Bliss and the general contractor, The Austin Company. As a result of the partnership, time growth was 4.2 percent (20 percent is typical), cost growth was 1.1 percent (average is 2 percent) and out of more than a million man hours worked, there was only one lost time accident on the job site. The success of this project is directly attributable to the district's dedicated project delivery team, which worked together throughout the life of the project.

Other Southwestern Area Office projects currently underway or which will be awarded in the near future include various projects which support the Army Strategic Mobility Plan (ASMP). Among them are a \$3.7 million Tactical Vehicle Overpass, which will allow tactical vehicles access to deployment areas without impeding traffic on a major community thoroughfare; a \$8.8 million upgrade to Biggs Army Airfield runways and taxiways; the construction of a new Air Deployment Complex, which will provide a "one-stop" deployment facility for troops; a new ammunition hot load area; a loading apron; and a rail deployment facility. Continued efforts to improve the quality of life on Fort Bliss will be supported by the construction of 64 new family housing quarters in FY01.

The district's San Antonio Area Office is responsible for executing work in 56 counties under the military program and 33 counties under the civil works and support for others programs. The office's average construction and operating budget is \$80-90 million.

The military customer base includes historic Fort Sam Houston with two smaller sub-posts; Kelly, Lackland, Randolph, Brooks and Laughlin Air Force bases; and multiple remote Army and Air Force sites supporting the Army Reserves and the Air Force Air Combat Command.

The area office is currently managing two major barracks projects at Fort Sam Houston with a total construction value of more than \$40 million. Amigo/JT Construction, Joint Venture started the **Barracks Replace Building 250** project in December 1998 which includes barracks for 288 soldiers and a community building. Because the barracks is being constructed on a portion of the post that is a National Historic Landmark District, elements from surrounding buildings were incorporated into the new exterior building design. Spaw-Glass Construction Co. started the **Barracks II Project** in July 1999. When finished, the complex will house 384 soldiers and include a community building. The barracks portion of the project will be ready for turnover to the post at the end of December. Late-in-1999 options to provide a company operations building and battalion staff building will be ready for turnover to the customer in January 2001.



Among the office's civil works projects are the **San Pedro Creek and San Antonio River Tunnels**, built to provide flood protection to the city of San Antonio. The San Pedro Creek Tunnel was finished in 1993 and the San Antonio River Tunnel was completed in 1998. The tunnels use an inverted siphon concept to transport floodwaters beneath the downtown and renowned Riverwalk areas of the city, and this is the first known use of a tunnel siphon for a major urban flood control project.



At the request of the local sponsor, recirculation facilities were added to the San Antonio River Tunnel. The recirculation facilities are unique in that they enable tunnel water to be pumped from the 24-feet, 4-inch tunnel at the Inlet during periods of low river flow. The water runs through various aeration mechanisms before being discharged into the river, and the aerated water augments the river flow through the downtown and Riverwalk areas before being recovered to the tunnel at the Outlet. Consequently, without using precious water from the Edwards Aquifer during the summer months, the river can be made to flow again by running the tunnel in reverse. During the spring when flows are high in the river, the

water can be withdrawn from the river and run through the aeration mechanisms and into the tunnel to improve the stagnant water residing in the tunnel, preventing water quality problems at the Outlet during a subsequent flood event. The design and integration of the recirculation facilities with the flood control tunnel required the coordinated efforts of the Corps, local sponsor, city, county and seven design firms.

In October 1998, just months after the completion of the San Antonio River Tunnel, a record flood washed down the San Antonio River, threatening to devastate the downtown and Riverwalk areas. Without the tunnel, the commercial establishments in the downtown area would have been inundated with about 6 feet of floodwaters. It is estimated that the tunnel paid for itself in damages prevented in this one single event.

The Central Texas Area Office was first established as a project office in 1951 and has since provided continuous support to the thousands of soldiers and airmen of the Texas Plains. The primary bases it supports are Fort Hood and Dyess and Goodfellow Air Force Bases. The office is also responsible for civil works construction over the Central Texas area, which includes 11 existing reservoirs.

Over the years, the Central Texas Area Office has overseen the construction of numerous projects including additions to hospitals, construction of vehicle maintenance projects and modular barracks complexes, renovation and additions of new housing, training and maintenance facilities, III Corps Headquarters, Apache Beddown hangars and medical clinics. In FY01, the total construction workload at Fort Hood alone is expected to exceed \$108 million.

Most recently, the Central Texas Area Office has helped III Corps and Fort Hood to field an entire heavy division to an overseas theater of operations within 30 calendar days. The \$32 million **Railhead Phases I and II** project will provide for the organization and loading of heavy equipment onto railroad cars for transport. Hensel Phelps Construction Co. is building 12 railroad spurs, demo and improvements to existing rail lines in Fort Hood's old industrial area, connections to existing Burlington Northern Santa Fe Railroad, utility tie-ins, storm drainage, paving, hardstand and related electrical power work.



Fort Hood Railhead Project

The railhead project includes approximately 1 million cubic yards of excavation, 500,000 cubic yards of earth fill, 19 miles of track, and covers about 880 acres. When the project is completed in 2002, Fort Hood will have the capability of loading 360 railroad cars per day.

For more information about the Fort Worth District, visit its website at www.swf.usace.army.mil.

POC: LARRY O. ROGERS, CESWF-EC, 817-978-2170

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Reorganization News

STATUS OF HQ AND E&C TRANSITION

With the exception of the impact of the phone strike, the move to 441 G Street, went very well. Boxes got to the right place and computers are up and running. Most people, but certainly not all, like the new surrounding. The environment, though, really is different. Ten Engineering and Construction folks landed there safely. Remember that these 10 people are the eyes and ears of E&C at 441 G Street. Use them to help get things done. Until approximately 1 November 2000, E&C will be working out of both the main headquarters at 441 "G" Street and out of the Pulaski Building at 20 Massachusetts Avenue.

We have had a number of telephone and computer interruptions during the move. If you cannot reach a member of the E&C staff by telephone send them an email. Our support people are working with the telephone company to get all telephones working again.

The construction notice to proceed has been issued by Baltimore District for the third floor Kingman Rehab. We had some high cost estimates from the contractor, but have gotten through that. The architectural design is 100% with Mech/Elec close to that. Since this is a design/build contract, though, this isn't slowing the contractor down. When completed we'll have some high quality workspace. Completion date is 1 November. Schedule is tight, but contractor and Baltimore District are committed to it.

We had planned to get the entire E&C staff in the Pulaski relocated to the eight floor of the Pulaski so we don't remain scattered around like now. However, the strike at Verizon deleted the implementation date for this action to 28 September at best. Since the move to the Kingman Building is scheduled for the first of November, the relocation within the Pulaski Building has been cancelled. In the meantime, each branch chief and team leader will be holding periodic meetings of their teams in some common space in the Pulaski to keep the process going building on team building in the new E&C.

There are a lot of rumors floating around the Pulaski, 441 G Street, and elsewhere that E&C will be totally housed at 441 G Street instead of split between there and the Kingman. These rumors are wishful thinking. There is a lot of sentiment to have us all together, as before. The conditions that drove the decision to locate part of HQ, E&C, at the Kingman have not changed, though. Once all the vacant positions are recruited and filled in HQ, the vacant workstations at 441 G Street will be mostly occupied. And without us there the Kingman would not be fully utilized. It's still a matter of supply and demand.

Our goal is excellent performance of our new E&C mission by:

- Being key members or leaders of the HQ PMBP (task by task, issue by issue)
- Participating as learners and leaders with the design, construction and environmental industry groups and professional societies
- Transferring new technology into productive practice throughout the Corps and industry
- Mentoring the field practitioners on how to get their jobs done well
- Providing the best technical guidance possible
- Tackling the vast national water resource, environmental, and military infrastructure challenges with solid engineering, good science and sound judgement
- And by demonstrating in words, deeds, and service, to all comers, that the Corps is still the top professional federal agency in the land.

An organizational listing of Engineering and Construction Division with office symbols, telephone numbers, and building location for each member of the division is available on the Engineering and Construction Division homepage at

http://www.usace.army.mil/inet/functions/cw/cecwe/eandc_phones.xls.

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Update

PMBP HAS NO 'SECOND-CLASS CITIZENS'

I am concerned, concerned about the prevailing attitude that our technical elements believe that they are a dying breed—that they are considered second-class citizens in the project management business process (PMBP). I've failed and we'll all fail if we continue to believe that.

We hear a lot about the concept of team in our Project Management Business Process; however, just as in the "All Star" lineup, we cannot have an effective team *without* the depth, talents and diversity of

the ballplayers. So it is with our project delivery teams (PDT). The depth, talents, and technical adeptness provided by our technical elements— those Engineering, Construction, Planning, and Real Estate team members— form the foundation of our PDT's. They are the heart and soul of the team, the foundation of our engineering processes. Though the Project Manager is the team leader, he or she would lead a totally ineffective team without the team members from our technical elements.

Concerning the concept of “stovepipes,” **Myth No. 1:** “Stovepipes” are the ultimate evil. **Reality:** They are not the ultimate evil. Vertical stovepipes through the hierarchy of the Corps are important to preserve technical competencies and compliance with applicable laws and regulations. They provide a needed sense of order, pride and affiliation with one’s chosen profession. They are evil only when they are used to bypass the project manager, *the team leader*. In doing so they suboptimize the Project Management Business Process and contribute to the failure of the project delivery team process.

Myth No. 2: The Project Management Business Process is just another stovepipe, the PM stovepipe. **Reality:** The PMBP is a process, not a stovepipe. The PMPB is a life-cycle process designed to deliver a project. If it is deemed a stovepipe, then again I’ve failed, and we’ll all fail if we defend our stovepipes at the expense of the process.

To be successful, Project Delivery Teams require effective teamwork. As the Corps culture changes from reliance on functional specialization to team performance, each level of management— from the Headquarters in Washington, D.C., to PM's located with the customer in the field— must adopt an approach that is mutually supporting, focused on project delivery and imbued with an emphasis on the primacy of the customer as a team member. The process we follow in the Savannah District (*and the entire Corps*) is geared toward being the most responsive to our customers! Though the PM is technically the team leader, all members of the team are equally important and all must be intimately involved in the project planning and project execution process. The PM is merely the integrator, the team leader who is responsible for bringing the team together and keeping the team focused.

Finally, we need to preserve a stable-based technical organization, and we must continually focus on preserving the technical competencies within the district as well as the Corps.

POC: COL JOSEPH K. SCHMITT, CESAS-DE, 912-652-5226

(Editor's Note: This article was written by COL Schmitt and first published in the Savannah District Castle in August 2000. While he was writing about the Savannah District it applies to the entire Corps.)

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SUSTAINABLE DESIGN AND DEVELOPMENT (SDD)

I am sure you all have seen renewed emphasis on sustainable development within the Federal Government. Recent Executive Orders, DoD, Army and USACE policies require us to adopt principles of sustainable development. Sustainable Design incorporates the energy concerns of the 1970's with new concerns in the 1990's, including damage to the natural environment; emissions of greenhouse gases and ozone depleting chemicals; use of limited material resources; management of water as a limited resource; reductions in waste; indoor environmental quality; and occupant/worker health, productivity and satisfaction.

We have updated many of our technical criteria to instill concepts of sustainable development and have developed a training workshop that will be conducted at many Districts. SDD training was presented to Omaha, Sacramento, Savannah and Seattle Districts June through August. The future training dates are provided below. Here are a few things being said about the training. “We had 30+ participants at the SAS

session, with approximately half of those being from installations and MACOM's/MAJCOM's. The diversity of the group made for interesting discussions, and ensures that all programmers, project managers, and designers will understand the need and merits of this initiative.” During the instruction, there were times when we were split up into teams to work on solutions to a case study. In those instances, it was good to have a cross section of varied experiences and disciplines on your team to come up with team solutions/output. The information regarding the Green Building Council's rating system is probably the most important to gained from the course. And, when CERL gets the militarized version disseminated throughout the Army and Corps, it will make the task much easier.”

Scheduled SDD Training is being presented by HQUSACE at the following locations.

Ft. Worth	- 17-19 Oct 00	Baltimore	- TBD Jan-Mar 01
Louisville	- 24-26 Oct 00	Kansas City	- TBD Jan-Mar 01
Mobile	- 7-9 Nov 00	Norfolk	- TBD Jan-Mar 01
Honolulu	- 7-9 Nov 00	Albuquerque	- TBD Jan-Mar 01
Tulsa	- 14-16 Nov 00	Alaska	- TBD Jan-Mar 01
Korea /Japan	- 14-16 Nov 00	Europe	- TBD Jan-Mar 01
New York	- 28-30 Nov 00		

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A PROPOSED SUSTAINABLE PROJECT RATING TOOL (SPRT)

BACKGROUND -- In a 1 May 2000 memo, the Army Chief of Staff for Installation Management (ACSIM) recently decreed that all future facilities would be designed and built according to sustainable principles. Sustainable Design and Development is the systematic consideration of current and future impacts of an activity, product, or decision on the environment, energy use, natural resources, economy, and quality of life. It is Army policy that the concept and principles of Sustainable Design and Development shall be incorporated into installation planning and infrastructure projects.

ACSIM has asked the U.S. Army Corps of Engineers (USACE) to provide technical guidance to support this initiative. The guidance will ensure that Sustainable Design and Development is considered in Army installation planning decisions and infrastructure projects to the fullest extent possible, balanced with funding constraints and customer requirements.

In working with an ACSIM/USACE Technology Coordinating Panel, the Engineer Research and Development Center has developed a rating tool that will help ACSIM, USACE, and their clients to identify and measure what are sustainable principles in each project that they develop. We call the resulting product, SPRT, for the "Sustainable Project Rating Tool." USACE intends to field SPRT with a requirement that all Corps designers strive to achieve a 'Bronze' rating for all future projects (see below). The Army is also considering requiring sustainable development on 1391s starting year 02. It is our expectation that SPRT may become the standard for the Department of Defense (DOD).

QUEST FOR A RATING TOOL -- While there have been a number of rating tools put into practice, most of them did not reflect the reality of military installation planning, design, and construction. We investigated a wide variety of sources on the measurement and rating of sustainable qualities during the planning, design, and construction phases of building and infrastructure projects. Upon analyzing

"the best of the best," we decided to adapt the Green Building Council's Leadership in Energy and Environmental Design Green Building Rating System 2.0 (LEED 2.0)TM.

LEED 2.0TM is divided into five categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. To these categories, SPRT adds three more: facility delivery process, current missions, and future missions. Each of these is synopsisized below. We also adapted LEED 2.0TM's format of describing the intent of a measure, defining a measurable and quantifiable requirement, and offering a strategy to meet the requirement. We used applicable, equivalent military standards and regulations, where applicable.

SPRT BASICS -- The following is a synopsis of SPRT. LEED 2.0TM has been supplemented in many areas, and energy conservation has been emphasized more strongly.

Sustainable Sites (Score 20) SPRT minimizes the impact of placing a building on a site, with an eye to land use compatibility and biodiversity. It channels development to installation areas with existing infrastructure, rehabilitates damaged sites, and reduces impacts from automobile use. SPRT optimizes microclimate and minimizes effects on neighboring sites of noise, light, runoff, pollution, etc.

Water Efficiency (Score 5) SPRT minimizes the use of potable water for landscape irrigation and within the building.

Energy and Atmosphere (Score 28) SPRT ensures that buildings work as intended. It establishes energy efficiency and optimization for the base building and systems and encourages use of renewable and distributed energy systems. It reduces ozone depletion and supports early compliance with the Montreal Protocol.

Materials and Resources (Score 13) SPRT reduces waste from construction and building occupants and redirects recyclable material back to the manufacturing process. It extends the life cycle of existing building stock, in part by extending the life cycle of targeted building materials. It increases use of building products with recycled content material and of locally manufactured building products. It reduces depletion of finite raw materials and encourages environmentally responsible forest management.

Indoor Environmental Quality (IEQ) (Score 17) SPRT promotes indoor air quality (IAQ) and prevents exposure to Environmental Tobacco Smoke (ETS). It provides a high level of individual occupant control of thermal, ventilation, and lighting systems. SPRT provides a connection between indoor spaces and the outdoor environment through the introduction of sunlight and views into the occupied areas of the building. SPRT provides appropriate acoustic conditions for user privacy and comfort.

The following areas are not found in LEED 2.0TM. They are designed to ensure that the delivery process is optimized to meet the needs of the present without compromising the needs of the future.

Facility Delivery Process (Score 7) SPRT delivers a facility that optimizes tradeoffs among sustainability, first costs, life cycle costs and mission requirements. It assures that the delivery process assures efficient operation and maintenance of the facility.

Current Mission (Score 6) SPRT assures that the delivery process establishes efficient operation and maintenance of the facility. It provides a high-quality, functional, healthy, and safe work environment to promote soldier and workforce productivity and retention.

Future Missions (Score 4) SPRT requires an understanding of: (1) The typical or likely lifespan of the function to be accommodated by the facility in order to recognize how soon the facility should be expected to adapt to a different use; and (2) The life spans of the building systems to understand when they will need to be updated during the lifespan of the facility and to design the facility in a manner that facilitates the updating of each system. It requires design of the facility to maximize accommodation of future uses. The greater the future flexibility, the less likely it is that the facility will become a source for waste materials, or that it will require additional materials.

SPRT Certification Levels

SPRT Bronze -- 25 to 34 Points

SPRT Silver -- 35 to 49 Points

SPRT Gold -- 50 to 74 Points

SPRT Platinum -- 75+ Points

THE SPRT PRODUCT -- SPRT is designed to be an easy-to-understand EXCEL worksheet that will allow self-scoring by building delivery teams and their members, either during the charrette process or by an independent panel.

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USACE-WIDE REGISTRY OF SKILLS (RoS)

The USACE-wide Registry of Skills (RoS) is now up and running. The Chief approved the RoS earlier this year and its deployment will take place in September 2000. The RoS is an on-line database created to support the Capable Workforce program, a USACE initiative to determine needed Corps skills and capabilities for the future and to identify the gap between our current capabilities and future needs. The RoS is intended to gather information from our current workforce on their present positions and responsibilities plus any other skills or capabilities they possess to support the region and Corps overall mission. This voluntary information is desired on all employees to ensure each team member has the opportunity to perform in a variety of situations consistent with regional or Corps-wide needs. The RMB's can use the RoS to develop a comprehensive staffing plan that concentrates on training and recruiting individuals to meet future mission requirements.

The RoS database is web-accessible and will contain information on the skills, abilities, education and training of USACE team members. The database was successfully tested by NWD earlier this year. Once fully populated, the RoS will provide commanders with a quick snapshot of the vast capabilities available throughout the Corps to support the USACE mission. The RoS can be used for readily identifying gaps in expertise that need to be filled through education, training, mentoring or

developmental assignments, and for quickly identifying people with specific skills and abilities in times of need. The RoS has been cleared with the HQDA Privacy Act Office.

To ensure the widest possible use of RoS we are currently developing a comprehensive implementation plan. As part of this plan each Major Subordinate Command, Center, and Field Operating Activity has been asked to identify a point of contact (POC) for implementing RoS. The name of the POC should be furnished to CECW-E and also identified to all team members in your command.

While I encourage all USACE team members to register in the RoS – the broader the registration, the more valuable the database – the RoS will contain only information that is entered voluntarily by individual team members. No one will be required to enter information, and no individual's information will be entered by someone else.

The RoS is intended to be a ready source of information on not only skills and abilities related to team members' current jobs, but also those skills and abilities that might be valuable to the Corps, but not used in current jobs. The RoS database can be searched very quickly using a wide variety of search criteria to identify team members with potential, for example, to serve on regional design teams, provide independent reviews, serve as expert consultants, serve as troubleshooters, serve on interagency panels or committees, or assist in emergency operations. In addition to providing a means to quickly identify human resources with various skills and abilities, the RoS will assist us in our outreach program and will assist in establishing partnerships and collaboration with community organizations, industry and academia in areas of mutual interest.

To use the RoS to enter your information or to search for people with specific skills and abilities, you must have a CEAP USERID and an Oracle password, be validated as a RoS user, and have access to a computer with a web browser (e.g., Internet Explorer or Netscape navigator). All team members who already have a CEAP USERID and Oracle password (you have this if you're a user of CEFMS or PROMIS) have already been validated as RoS users. If you're validated, simply use your browser to go to the URL <http://ros.usace.army.mil:1096> and log on. If you don't already have the CEAP USERID and Oracle password, call your UPASS administrator (in your IM Office) and he/she will set up your USERID and password and validate you as a RoS user.

The RoS is intended to be very user-friendly. It contains an on-line Help system and a link for sending email to the RoS database administrator. Please use this to report any problems you have, to comment on the system or to suggest improvements. Your suggestions will be carefully considered, and you will get a reply.

POC: RAY NAVIDI, CECW-E, 202-761-4238

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ENGINEER OF THE YEAR AWARD PROGRAMS

On 17 August 2000, Major General Fuhrman, Acting Commander, announced the establishment of a USACE Engineers of the Year Award Program. This will be the first year that the Corps will be recognizing its outstanding professional engineers (P.E or E.I.T), one military and one civilian, with honors provided at a HQUSACE ceremony. Additionally, together with other federal agencies, we will participate in the annual Federal Engineer of the Year Award (FEYA) Program sponsored by the National Society of Professional Engineers (NSPE). This is the twenty-second annual NSPE FEYA program.

A HQUSACE panel will select two Corps of Engineers awardees, one military and one civilian, for the USACE Engineers of the Year Award from nominees provided by your commands/separate offices. These awardees will be the nominees for the NSPE FEYA competition. An NSPE evaluation panel will select the "Federal Engineer of the Year". Individual agency award winners and the "NSPE Federal Engineer of the Year", will be honored at a ceremony to be held in conjunction with National Engineers Week, 18-24 February 2001.

Through these programs you have the opportunity to formally acknowledge the contributions of an outstanding military and civilian engineer from your command/separate office. I urge you to take advantage of this opportunity. In the past, we have had an excellent response to producing exceptional candidates for the NSPE FEYA.

Your nominees must be registered professional engineers (P.E or E.I.T). Each command/separate office can provide a military and civilian engineer nominee. An original and eight copies of the NSPE nomination document, must be submitted to HQUSACE (ATTN: CECW-ET-V), by COB 6 October 2000. To assure equal treatment for all, this deadline date will not be extended. The nomination form for both competitions can be downloaded from the Engineering and Construction Division homepage (<http://www.usace.army.mil/inet/functions/cw/cecwe/>).

*POC'S: BRUCE WALLACE, CECW-ETV, 202-761-8890
AND PETE JUHLE, CECW-ETV, 202-761-4242*

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A-E PERFORMANCE EVALUATIONS

Many A-E firms have multiple offices, and more than one office may have been involved in a project. When preparing a DD Form 2631, Performance Evaluation (Architect-Engineer), reflect the A-E office location in Block 6 which had the lead role in performing the work (see FAR 42.1502(a)). This may not be the office that signed the contract. The evaluation will not be useful or relevant in future selections if it does not reflect the office that actually performed the work. And a search of the Architect-Engineer Contract Administration Support System (ACASS) will not locate the appropriate evaluations.

When searching ACASS for the evaluations for a particular office of a firm, also look under the headquarters office in case an evaluation was misfiled. (Each firm has a numeric ACASS designation (e.g. 12345) and each branch office of the firm, if there are any, has an alphabetic suffix (e.g. 12345E)). If multiple offices are proposed to work on a project, search for evaluations of all of the participating offices. However, it is not appropriate to consider evaluations for offices that will not be assigned to a project.

POC: DON EVICK, CEMP-ETE, 202-761-4227

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SPECIFICATIONS FOR CONCRETE REHABILITATION

The Pittsburgh District has been selected by the Corps Specifications Steering Committee to prepare a new Corps of Engineers Guide Specification (CEGS) for Concrete Rehabilitation. The District is looking for examples of specifications that have been prepared or used by other districts for successful rehabilitation of concrete structures. They are also interested in lessons learned from designers and field personnel on completed concrete rehabilitation projects. The intent is to limit the scope of this

specification to rehabilitation of civil works type structures such as locks, dams, local flood protection projects and bridges (i.e. not buildings or pavement).

Please furnish a copy of any such specifications or lessons learned, which you think would provide useful information for preparation of a Corps-wide guide specification to the Pittsburgh District. The district would also like to have nominations for members of an Independent Technical Review team to review the draft specification. Please submit names and a brief statement of experience to the address below. Hard copies may be mailed to: Pittsburgh District Corps of Engineers, ATTN: CELRP-ED-DT (Tom Andre), William S. Moorhead Federal Building, 1000 Liberty Avenue, Pittsburgh, PA 15222-4186. Electronic copies may be sent to Thomas.Andre@lrp02.usace.army.mil.

The current schedule is to begin review of available information in October 2000 and prepare a draft specification for review in the winter of 2000/2001. Responses are requested by 6 October 2000.

POC: TOM ANDRE, CELRP-ED-DT, 412-395-7306

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AIRFIELD CRITERIA FOR NEW ARMY PLANES

The Transportation Systems Center (TSMCX) has been asked by the U.S. Army Aeronautical Services Agency to participate in a working group to establish engineering criteria for Remotely Operated Aircraft (ROA) launch and recovery platforms. Initially the group will gather input from the aircraft manufacturer and users for the Army's mission. Eventually the effort will be expanded in scope to include Air Force and Navy aircraft, if they so chose to participate. The initial product will be an Army specific ETL, followed by an added chapter to TM 5-803-7 to cover tri-service requirements. The first meeting will be in Oct 00 at Fort Huachuca, AZ. (Greg Hughes/CECW-EE/761-4140/31 Aug 00)

POC: GREG HUGHES, CECW-EWS, 202-761-4140

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Dam Safety

DAM SAFETY 2000 AND CORPS OF ENGINEERS DAM SAFETY MEETING

Attend the 17th Annual Conference of the Association of State Dam Safety Officials. Dam Safety 2000, which features a brand new schedule of events, will be held at the Westin Providence and the adjoining Rhode Island Convention Center, 25-30 September 2000.

District and Division Dam Safety Coordinators as well as MACOM and Installation Dam Safety Engineers are invited and encouraged to attend the Dam Safety Meeting on September 26 and 27. Individuals interested in attending the Corps meeting or having topics to present and discuss at the meeting are asked to contact Charles Pearre, CECW-EIS, or Bob Bank, CECW-EWW, by email.

For more information on the ASDSO Conference call Susan Sorrel at ASDSO (859) 357-5146 for details. Or send an email to sasorrell@damsafety.org. Or visit the ASDSO homepage at <http://www.damsafety.org>. Registration materials are available on the ASDSO homepage.

POC: ROBERT BANK, CECW-EWW, 202-761-4243

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FY 2001 INFRASTRUCTURE TECHNOLOGY CONFERENCE

An USACE-wide Infrastructure Technology Conference is being planned for FY 2001. The conference would combine Dam Safety and Structures into a single conference with two or more tracks (or concurrent schedules).

HQUSACE is seeking Districts interested in hosting this conference. Hosting the conference would involve selecting a location within your district, arranging for the lodging and conference site, preparing administrative material, receiving registrations for the conference, and setting and collecting the conference fee. Attendee registration fees will pay the costs of the conference.

If you are interested, you may contact Charles Pearre (202-761-4531), Jerry Foster (202-761-8676), or Joe Hartman (202-761-0291).

POC: CHARLES PEARRE, CECW-EIS, 202-761-4531

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Information

PARTNERING WITH INDUSTRY TO IMPROVE ACQUISITION PROCESSES

We often engage in frank dialogue at the national level with our industry design and construction partners such as the Associated General Contractors, the American Consulting Engineers Council, the American Institute of Architects, the Design Build Institute of America and others. To be fully successful in the implementation of the various acquisition strategies available today we must be consistent and fair in our dealings with industry. New tools bring new challenges. The increased use of best value negotiated procurements has raised industry concerns in the area of performance evaluations in particular and the source selection process in general. Traditional sealed bid methods did not place a great deal of importance on past performance. Price, by and large, determined the basis of award. Best value procurements place an increased resource burden on both the Government and the industry and it is in the best interest of all to mitigate costs while assuring that the process is fair. Some areas are ripe for improvement. Consider the following.

Cost to Compete: Proposal preparation, particularly where significant technical design is required, is a major expense to offerors and may likely discourage competition. We need to structure our submission requirements to ask for only enough information to establish quality and price. Never require information that will not be evaluated. Also, for design-build contracts where significant proposal costs are envisioned we should use the two-phase selection procedures. Indefinite Delivery Contracts (IDC) in any of their various forms may provide a valuable method to meet customer needs. However, each task order proposal represents a sunk cost to the contractor. On multiple award IDC's, particularly those without full designs, each RFP for a task order should include only requirements necessary for the evaluation and selection and should be proportionally balanced to the dollar value, size, and complexity of the scope of work. Overly elaborate submission requirements or request for proposals that "test the waters" will result in reduced competition and higher costs to the Government.

Best Value Source Selections (RFP's): What is Best Value? Bottom-line – buy wisely, not necessarily the cheapest. In the broadest sense, getting the product and/or service for the best value is

the object of all Government acquisition. This process requires much more input and information from each offeror for each RFP. This requires that the solicitation tell the offerors what should be included in their proposals and how the Government will evaluate those proposals. This is a critical aspect of this process, since many of our contractors are not necessarily familiar with these procedures. This includes making sure that the evaluation criteria always includes cost, and that quality is addressed through one or more non-cost factors, such as past performance, technical capability, or management capability. Finally, the solicitation should make clear the relationship of all evaluation factors to each other. This is essential to any trade-off decisions and helps competitors to decide on how to structure their proposals and best fulfill the Government's needs.

Performance Evaluations: Since past performance is a mandatory evaluation factor in each best value source selection, contractors are becoming more cognizant of the fact that with best value techniques contractors may live or die by their performance record. Therefore, it is incumbent upon USACE contract administrators to do the utmost to complete construction contract performance evaluations in a thorough, fair and timely manner so that these performance evaluations can be used to properly assess the capabilities of these contractors for performing future contract work. In performing these source selection evaluations, the risk assessment of past performance to predict an expected level of success on a particular acquisition is the fair and reasonable way to deal with this subject. Past performance consideration is a business decision not an exact science. Past performance evaluations should be used as a management tool during contract execution, but neither in a carrot or stick scenario, nor as a thinly veiled threat during negotiations of modifications..

Debriefings: Successful debriefings are useful to contractors and the Government. Constructive explanations of both strong and weak features of proposal submissions and clarifications of questions on the award process will pay huge future dividends in increased competition and better proposals. Constructive feedback from offerors can improve our processes and should be encouraged.

Divisions, districts and centers should actively support partnering with industry groups to maintain open communications for honest expression of concerns and sharing of good ideas. Periodic command meetings with industry representatives will go a long way to improve the project delivery business process. Resource Management Boards should work this in accordance with their role in evaluating district acquisition strategies. District project delivery teams must stay attuned to acquisition issues that span all functional areas to include project management, engineering, and construction, as well as contracting.

HQUSACE has formed a multifunctional team to work with industry on design-build and other acquisition strategy issues and we will be providing information periodically as these discussions progress.

POC: MARK GRAMMER, CECW-ETC, 202-761-4127

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JOB VACANCIES

Four vacancies are highlighted here for the information of our readers.

The Seattle District has announced a GS-13 position their Small Project Section of Construction Branch in the District Office. The position will be filled as a Supervisory Civil, Mechanical, or Electrical Engineer and the individual will serve as supervisor over employees engaged in Small Projects work. The individual is responsible for supervising and personally performing the full range

of construction program work. Construction projects include military construction, civil works, work for others (WFO), and hazardous and toxic waste (HTW) at sites located throughout Washington, Oregon, Montana, and Idaho. The individual plans, organizes, coordinates, schedules and reviews the work of employees supervised and serves as consultant and point of contact on small project design, contracting and construction. The individual also will serve as Contracting Officer's Representative (COR) and ACO for contractor's shop drawings and other submittals. The West Region Civilian Personnel Operation Center, Ft Huachuca is currently accepting resumes for this position through the RESUMIX system. The closing date is 29 September 2000. For additional information individuals may contact Susan.L.Smith-Anderson@nws02.usace.army.mil.

The New Orleans District has announced a GS-13 Supervisory Civil Engineer position as chief of their Engineering Control Section, Engineering Division. As Chief, Engineering Control Branch, Engineering Division, the individual is responsible for the overall programming, scheduling and coordination of the Engineering Division design programs and for the various other engineering and related support provided other District elements. The section plans, coordinates and supervises the activities of professional and nonprofessional employees engaged in a variety of engineering and technical work assignments associated with the accomplishment of branch functions. The individual technically and administratively directs and controls the activities of the branch to assure steady workflow, maximum production, compliance with deadlines, and efficiency of operations. The chief reviews incoming work, studies work requirements, plans and distributes work assignments and insures that personnel are used to best advantage. As a branch supervisor, the individual advises and assists subordinates in solving unusual or especially difficult problems; reviews completed work, and renders decisions on controversial matters. As a manager, the incumbent is responsible for assuring that assigned activities are conducted in the most efficient and economical manner consistent with mission accomplishment. The individual serves as a technical advisor and consultant to top management of Engineering Division in planning and developing the design program for the accomplishment of the workload assigned to Engineering Division. The chief uses innovative and standard methods and techniques for developing, managing and monitoring the design program, including the Corps automated systems such as the Corps of Engineers Financial Management System (CEFMS), the Project Management Information System (PROWS) and databases developed and maintained for use by Engineering Division. The individual consults with higher authority, other agencies and local interests when appropriate pertaining to assigned functions. The position coordinates, reviews and manages Engineering Division's support to other district elements, including the operation of project teams as a part of the Project Management Business Process, design work requested by Operations and Readiness Division, and a wide variety of miscellaneous requests from other divisions and offices. Working Information Management, the individual directs the development and/or adaptation of computer programs to produce a variety of automated reports. The South Region Civilian Personnel Operation Center is assigned this position Stairs Recruitment Notice Number: S00GY046858DKH. The announcement is open now and closes on 10 October 2000. A self-nomination form may be obtained from your local Army CPAC or online in our Job Kits located via the Army Civilian Personnel Online (CPOL) home page (<http://www.cpol.army.mil>). Self-nominations may be E-mailed to selfnom@cpocscr.army.mil (subject line should read only "selfnom" immediately followed by the announcement number). Or the form can be faxed to 256-313-0686, or mailed to South Central Civilian Personnel Operations Center, Sparkman Complex, Bldg 5304, Staffing Services Division ATTN: SFCP-SC-S-D (Self-Nomination), Redstone Arsenal, AL. 35898. An individual may self-nominate directly from this announcement posted on CPOL (click on the "Self Nom" button at the end of this announcement, complete the form and then click on the "Submit" button.). For additional information individuals may contact Gerard.S.Satterlee@mvn02.usace.army.mil.

The Albuquerque District is currently recruiting for two Civil Engineers, GS-810-11 or 12, in the Design Branch, Geotechnical and HTRW Section, Albuquerque, New Mexico. Your assistance is requested to insure maximum distribution of this announcement to your staff who may be interested in this opportunity. The duties include serving as a technical specialist in the field of Geotechnical Engineering for the District and other Federal and State agencies pertaining to design, construction, inspection and evaluation of flexible and rigid pavements, building foundations and earth structures. Also, performing and/or overseeing field investigations, field and laboratory testing programs and analyses of soil and foundation data. The individuals will prepare analyses, designs and provide technical reports for general investigations studies, feasibility reports, detailed design reports and construction documents. The work includes designing and evaluating flexible and rigid pavements including new pavements, reconstruction, overlays, and extensions of existing pavements. The engineers provide geotechnical engineering portion of civil and military earthwork specifications and reviews completed specifications for applicability to contract plans. In addition they initiate designs and oversee installation of instrumentation systems to monitor performance of earth and rockfill structures and foundations during and after construction. Both positions include preparing inspection reports, conducting briefings, and participating in periodic inspections of completed civil works projects. Further information regarding the District's program can be obtained from the District's webpage: <http://www.spa.usace.army.mil/>.

**POC's: SUSAN SMITH-ANDERSON, CENWS-HR, 206-764-3738
GERARD S. SATTERLEE, CEMVN, 504-862-1000
AND KIM B. ZAHM, CESPA-EC-E, 505-342-3469**

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COLUMBIA RIVER TREATY ALLOWS EQUITABLE SHARING OF INTERNATIONAL WATER RESOURCES

The Columbia River basin is located in the Pacific Northwest, and its headwaters meander between British Columbia and the U.S. It is a hydrologic oddity: although only 15% of the drainage basin is in Canada, Canada provides 30% of the river's average annual flow; half of the flow in the worst Columbia River flood came from Canada; and the river has a much wider range of flow (low-flow vs. flood) than other large rivers in North America. In 1945, an International Joint Commission study determined that further development of the Columbia River would be practical and in the public interest. Thus began international efforts for the U.S. and Canada to work together to take advantage of the vast Columbia basin water resources



The Columbia River Treaty, ratified in 1964, requires Canada to construct and operate 15 million acre-feet of storage on the Columbia River and a tributary in Canada for optimum power generation and flood control downstream in Canada and the United States. The Treaty provides numerous benefits to the U.S. and Canada, and allowed USACE to build the Libby Dam in Montana, whose reservoir extends into 42 miles into British Columbia.

The Treaty established a Permanent Engineering Board (PEB), which reviews actions of the implementing agencies (Entities) for consistency with treaty objectives and assists the Entities in resolving disputes. A Permanent Engineering Board Engineering Committee (PEBCOM) was later created to assist the PEB in reviewing Entity actions. USACE

representatives on the PEB include Steve Stockton, CESPD, and Earl Eiker and Bob Bank, HQUSACE. USACE representatives on PEBCOM include Jim Barton, CENWD-NP, and Bob Bank. U.S. and Canadian interests are equally represented on the PEB and PEBCOM.

An Assured Operation Plan (AOP) is developed as a basis for determining downstream power benefits, which are shared among the nations. Each year a Detailed Operating Plan is prepared, which allows for changes from the AOP that are mutually beneficial to both countries. An Operating Committee, consisting of U.S. and Canadian representatives, establishes these Operating Plans. USACE representatives on the Operating Committee include Bill Branch and Cindy Henriksen of CENWD-NP.

The Entities have the option to terminate the Treaty after 60 years, in September 2024. However, the right to operate Libby and the use of flood control storage space in the Canadian Treaty projects remains in effect as long as the projects exist. This assures that the benefits of this Treaty continue in perpetuity.

POC: BOB BANK, CECW-EWW, 202-761-4243

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NATURAL RIVER DRAWDOWN ENGINEERING

What is Natural River Drawdown? -- The FR/EIS compares the effectiveness of four courses of action: maintaining the existing system with planned improvements, maximizing the transport of juvenile salmon, making major system improvements to fish bypass facilities, and breaching the dams, also known as natural river drawdown. If the dam breaching alternative were chosen, a portion of each dam would be removed and the four lower Snake River reservoirs would be drawn down to the level of a natural river, creating a free-flowing 140-mile stretch of river. This process is known as natural river drawdown. This Information Sheet provides a summary of natural river drawdown engineering and an overview of the effects of dam breaching. A detailed discussion of the engineering process can be found in *Technical Appendix D—Natural River Drawdown Engineering*.

Significant preparatory actions would be necessary in order to draw down the reservoirs in a manner that is safe, economical, and timely. The required actions fall into the five categories.

1. Reservoir Evacuation -- Reservoir drawdown could not begin until August of most years at which time the spring runoff season is complete and river flows have reduced to a manageable level. The reservoir water must be discharged and the embankment segment of the dam must be fully excavated by the end of December of most years at which time winter storms have a high probability of creating high river flow conditions. High river flows threaten the systematic lowering of the reservoirs and create rapid drawdown conditions that could endanger workers and property and can destabilize many highway and railroad embankments bordering the reservoirs. Since low level outlets do not exist at each of the dams, the existing turbines and turbine passages would need to be modified to allow them to be used as short-term low-level outlets.

2. Embankment Removal and River Channelization -- Removal of the embankment portion of the dam would be performed concurrently with reservoir drawdown. The work would be performed during the time period between the end of the spill season in August and the start of the next high flow season in January. The construction of channelization levees would follow immediately and be completed in March of the same season. The goal of river channelization is to create a smooth transition for the river channel around concrete lock and dam structures remaining in the natural river channel.

3. Equipment and Structural Disposal -- The concrete structures such as the powerhouses, navigation locks, and the non-overflow sections would remain within the channelization levees and be secured against public access. The remaining steel, mechanical, and electrical structures and equipment would be disposed as scrap or would remain at the site.

4. Modifications in the Reservoirs -- Modification of the reservoir infrastructure would be necessary as a result of lowering the reservoirs. Up to 25 bridge piers would require protection from erosion due to higher velocity river water. Railroad and highway embankments would need to be protected from erosion due to higher velocity river flows. Drainage structures, originally designed to allow passage of water through embankments into reservoirs, would need to be protected so that discharge water does not erode the embankment. Large quantities of rock would be necessary to stabilize the critical sections of embankments. Repairs to roads and rail beds would be needed as a result of settlement and slope failures of embankments. Modifications related to fish, wildlife, recreation, and cultural resources would be needed in each reservoir. Extensive modifications to the Lyons Ferry Hatchery would be necessary to maintain limited production during the drawdown process. Alternate irrigation facilities at habitat management units would be needed to maintain short-term operation. During and following drawdown, exposed landmasses would be re-vegetated and habitat management units would be re-fenced. Recreation areas would be modified or, in some cases, closed. A significant cultural resources protection program would be implemented to protect over 300 known sites that would be exposed after drawdown. A number of major agricultural and industrial modifications would be required by drawdown. For example, the Corps developed concepts for a corporate irrigation system for the major irrigators now using the Ice Harbor Reservoir. Modifications to existing water wells may be necessary to maintain current water yields. Other actions that may be necessary include modifications to water intakes for industrial and municipal use, modifications to an industrial effluent diffuser, and replacement of a river crossing for a gas pipeline.

5. Schedule and Cost -- The recommended sequence for implementing drawdown would be to concurrently breach the embankment segments of Lower Granite and Little Goose dams in one construction season followed by concurrent breach of embankment segments of Lower Monumental and Ice Harbor dams the following construction season. Numerous engineering and construction activities would precede and follow dam breaching. The timeframe for implementing drawdown is estimated to extend over 9 years. The drawdown of the reservoirs would occur during years 6 and 7 of this 9-year schedule. The cost of all Federal engineering and construction activities to implement the design and construction actions for drawdown is estimated at \$1 billion. Detailed cost estimates can be found in *Technical Appendix D- Natural River Drawdown Engineering*.

Summary of Some of the Actions and Effects the Dam Breaching Alternative

Action

- Removal of dam embankment
- Elimination of reservoirs
- Shut down of navigation lock
- Shut down of powerhouse
- End of juvenile fish transport program on the lower Snake River
- New fish and wildlife mitigation
- Protection of cultural resources
- Modifications to some reservoir facilities

Effects

- Moderate reduction in extinction risks for fall chinook and steelhead (CRI)

-
- Slight reduction in extinction risks for spring/summer chinook (CRI)
 - Loss of hydropower generation; raised electric rates
 - Loss of navigational capacity; impacts on other transportation systems; increased transportation costs
 - High sediment movement
 - Impacts to irrigation and water supplies
 - Short-term gain and long-term loss of jobs and income
 - Gain in recreation opportunities

*POC'S: DAVE DANKEL, CENWW-PD-EC, 509- 527-7288,
STEVE TATRO, CENWW-EN-GB-MD, 509-527-7620,
AND GENE SPANGRUDE, CENWW-EN-H, 509-527-7292*

(Editor's Note: This information is from a fact sheet developed as part of the Lower Snake River Juvenile Salmon Mitigation Feasibility Report (CENWW). The full report is available at <http://www.nww.usace.army.mil>.)
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SEDIMENT TRANSPORT ANALYSIS

Sediment Transport Under Alternatives 1, 2, and 3 -- Under Alternative 1 (Existing Conditions), Alternative 2 (Maximum Transport of Juvenile Salmon), and Alternative 3 (Major System Improvements), Lower Granite Lake would continue to capture the current average annual sediment load of 3 to 4 million cubic yards per year that the lower Snake River is carrying due to basin runoff. About 80 percent of this sediment inflow is from the Snake River, while about 20 percent is from the Clearwater River.

Sediment Transport Under Alternative 4 (Dam Breaching) -- Breaching of the four lower Snake River dams would allow the annual sediment load of 3 to 4 million cubic yards (2.3 to 3.1 million cubic meters) to be carried downstream to Lake Wallula, where the majority of incoming sediment would likely be deposited. Lake Wallula is created by McNary Dam, which is the first dam downstream on the Columbia from the Snake River confluence. The very finest silts and clays would be carried as suspended sediment downstream through Lake Wallula, with their ultimate destination likely being the Lower Columbia estuary or the Pacific Ocean.

Besides annual loads, recent sediment volume estimates indicate that approximately 100 to 150 million cubic yards of sediment have accumulated behind the four lower Snake River dams. Approximately 50 percent of this previously deposited sediment is expected to erode and move downstream within the first few years following dam breaching, particularly during peak flow periods. This translates to about 50 to 75 million cubic yards of material that could move downstream. The remainder of the sediments not eroded within the first few years of dam breaching would be subject to long-term erosion by wind and precipitation, and could eventually also be transported downstream to Lake Wallula.

Sediment Deposition Patterns -- It is difficult to estimate the volumes and locations in which the various sized particles that make up the accumulated sediment would be redistributed downstream. The majority of the initially eroded material would likely be redeposited in Lake Wallula between the Columbia-Snake River confluence and Wallula Gap, approximately 10 miles downstream. *Technical Appendix F— Hydrology/Hydraulics and Sedimentation* (Plates 20.1 to 20.5) shows the qualitative predictions of sediment deposition in Lake Wallula. Since the flow velocities in Lake Wallula are generally slower than in the Snake River, the very coarsest cobble materials could be initially deposited in the vicinity of Ice Harbor Dam. It is possible that these sediments could also be resuspended and further transported downstream into Lake Wallula. The smallest sediments would

probably pass downstream through McNary Dam and continue to Sediment Transport Analysis be transported as suspended sediment downstream to the Columbia River estuary.

Potential Deposition Patterns -- The east bank of the Columbia River, between its confluences with the Snake and Walla Walla rivers, appears to be susceptible to sediment deposition, based on qualitative analyses. Actual sedimentation patterns and depths are extremely difficult to predict in advance due to the numerous variable factors involved. These factors include the long-term unpredictability of seasonal flows, uncertain land use practices, as well as the uncertainties of weather erosion due to precipitation and wind action. The potential depth of sediment deposition in Lake Wallula is not likely to present navigation problems. Future proactive measures to protect irrigation water intakes from sedimentation effects might be required along this reach, although site-specific details are extremely difficult to predict in advance. Redeposited sediment would likely cover large areas of benthic habitat, which could cause a major short-term disruption in the primary productivity and food supply for bottom feeders.

Costs -- If the four lower Snake River dams were breached, the total cost for a sedimentation monitoring program designed to evaluate erosion and sediment transport during the first 10 years after dam removal is estimated to be \$2.2 million.

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(Editor's Note: This information is from a fact sheet developed as part of the Lower Snake River Juvenile Salmon Mitigation Feasibility Report (CENWW). The full report is available at <http://www.nww.usace.army.mil>.)
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NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM

Effective 1 October 2000, the Standard Industrial Classification (SIC) system for small business size standards will be replaced by the North American Industry Classification System (NAICS). Also, effective July 17, 2000, the size standards for building and heavy construction and special trade contractors were revised, principally to reflect inflation. A comparison of the old SIC codes and new NAICS codes and size standards for construction and engineering are shown below:

Industry (per NAICS)	NAICS Code	SIC Code	Small Business Size Standard
Building, Developing and General Contracting, except Land Subdivision and Land Development	233210- 233320	1521- 1542	\$27.5 M. Was \$17.0 M.
Heavy Construction, except Dredging and Surface Cleanup Activities	234110- 234990	1611- 1629	\$27.5 M. Was \$17.0 M.
Dredging and Surface Cleanup Activities	Part of 234990	Part of 1629	\$17.0 M. Was \$13.5 M.
Special Trade Contractors	235110- 235990	1711- 1799	\$11.5 M. Was \$7.0 M.
Architectural Services	541310	8712	\$4.0 M. No change.
Landscape Architectural Services	541320	8712	\$5.0 M under NAICS. Now part of SIC 8712 (\$4.0 M).

Engineering Services (procured under Brooks A-E Act)	541330	8711	\$4.0 M. No change.
Geophysical Surveying and Mapping Services	541360	8713 & Part of 7389	\$4.0 M. No change.
Surveying and Mapping (except Geophysical) Services, and Mapmaking	541370	8713 & Part of 7389	\$4.0 M. No change.
Interior Design Services	541410	8712	\$5.0 M under NAICS. Now part of SIC 8712 (\$4.0 M).
Environmental Consulting Services (except Environmental Engineering Services under 541330)	541620	N/A	\$5.0 M under NAICS. Not separately identified in SIC.
Environmental Remediation Services	562910	Part of 8744	500 People. No change.

To view the full regulation on the NAICS, look at the final rules published in the 5 September 2000 edition of the Federal Register at http://www.access.gpo.gov/su_docs. The NAICS is described in detail in the North American Industry Classification Manual – United States, which is available via the Internet at <http://www.ntis.gov/yellowbk/1nty205.htm>. The manual includes definitions for each industry and tables showing the relationship between NAICS and SIC codes. Also, the U.S. Census Bureau has a site that cross references the NAICS and SIC codes at <http://www.census.gov/epcd/www/naics.html>.

POC'S: DON EVICK, CECW-ETE, 202-761-4227

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HEATING, VENTILATING AND AIR CONDITIONING (HVAC) SYSTEM DESIGN

Several recent projects have required substantial modifications to the HVAC systems to correct basic design and/or construction deficiencies. To help alleviate systemic problems and improve the overall quality of design and construction of HVAC systems, please initiate the following requirements on future Army projects:

- Include CEGS-15995 “Commissioning of HVAC Systems” in all applicable projects. Please note that the effective use of this specification requires active participation of the designer throughout the commissioning process. Participation of the customer throughout the commissioning process should also be strongly encouraged. Districts may want to consider using an independent third party contractor to perform HVAC commissioning to include preparation of plans overseeing of contractor testing and implementation of the commissioning plans.
- Recently CEGS-15990 “Testing, Adjusting, and Balancing (TAB) of HVAC Systems” was revised to strengthen the technical and testing procedures as well as improve the enforcement provisions. Designers need to actively participate in the process including preparation and review of TAB plans, rechecking of the required measurements and review of completed TAB reports. Customers should be encouraged to participate, especially in rechecking measurements.

POC'S: HARRY GORADIA, CECW-ETE, 703-428-6460

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Value Engineering

CONGRATULATIONS FOR WONDERFUL COORDINATION WITH SPONSORS

South Pacific Division and the Los Angeles District are congratulated for their coordination with sponsors and users. The Value Engineering (VE) study on the Rio Salado Environmental Restoration Project was an outstanding success with sponsors and stakeholders. The district invited five professionals from Maricopa County Flood Control District, six professionals from City of Phoenix Environmental Office, two professionals from the Phoenix Parks Department, and a project manager from the City of Tempe, Arizona to participate in the VE study as a coordination tool. The biggest Corps benefit of this VE work was full and open coordination with stakeholders, and all involved felt that they improved the project. This coordination also resulted in accepted cost avoidance of over \$3.2 million in first costs, and over \$8 million in O&M cost avoidance. An additional \$6 million in life cycle cost avoidance proposals remains under consideration. The locals' appreciation for the effort was evidenced by their request for a follow-on VE study. This is an example of excellence in Project Management.

POC: MICHAEL HOLT, CECW-EV, 202-761-8738

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SMART PARTNERING AND VALUE ENGINEERING

This year, Portland District handled a significant portion of the Dalles Powerhouse Fishway Dewatering Improvements project virtually. The design report had been prepared by an A/E consultant, and Portland District contracted the Plans & Specifications work to Omaha District. Omaha District initiated a VE study, and hired a second A/E firm to lead the effort. The VE team included both Districts' A/E consultants and Omaha District design personnel, and received strong Portland District project management support. Portland's partnering with Omaha, coupled with proper insertion of VE for solid coordination, helped relieve a stressed schedule, optimized use of Corps resources, ensured avoidance of approximately \$4,000,000 in potential costs on this \$8,000,000 project, and accomplished plans & specifications. Excellent work by NWD and the two districts.

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VALUE ENGINEERING ON FORT BLISS RAILROAD

The Transportation Systems Center (TSMCX) supported Fort Worth District as a member of the Value Engineering Team that studied the Rail Deployment Center at Ft. Bliss, TX. The VE team provided a number of ideas for improving project value; including the relocation of the ammunition rail loading facility a number of miles north, closer to the ammunition supply point. The ammunition loading function can be combined with a second project planned for this same area, eliminating one rail spur and reducing the requirement for trucking ammunition onto the main post.

POC: GREG HUGHES, CECW-EWS, 202-761-4140

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Open Discussion and Comments

DAM LEAKAGE & GROUT CURTAINS

Instead of the usual questions and answers, this discussion is in the form of a series of messages between Corps of Engineers Senior Geologists. Our readers are encouraged to provide additional discussion on this subject by forwarding comments to the Editor at charles.pearre@usace.army.mil.

Opening Discussion: I recently returned from a meeting with several Corps experts and consultants (including Don Bruce & Jim Erwin) to determine whether a grout curtain could be considered a permanent barrier to foundation leakage/seepage. I was surprised that all present were unanimous in their opinion that it could not! Some of the more significant comments:

- Even the most ardent advocates of high-tech grouting admitted that a modern, well-engineered grout curtain could be expected to last anywhere from 30 to maybe 100 years. Most grout curtains designed and constructed before 1980 could be expected to develop problems after only 20-50 years.
- Sediment-filled fractures & joints are the biggest problem in grout curtain deterioration.
- Case histories of failing grout curtains indicate that these curtains never achieved closure criteria due to funding constraints during initial construction.
- Competition for O&M funds will accelerate in the future for a variety of reasons. Each year several districts spend from \$0.5M to \$2.0M each on remedial grouting. Expenditures of this magnitude will be few & far between in the future.
- The European equivalent of NATM does not consider a single line of grout holes to be a curtain or a positive cut-off. Instead they define a single row of split-spaced grout holes as exploratory grouting.

-Mike Klosterman

Continuing Discussion: Were there any indications that the failure of grout curtains are distributed over all types of rock foundations or are they more numerous with limestone or karstic type foundations. Does the data apply equally to a three-line grout curtains as well as a single line curtain? Has any type of a written report been made that documents the case histories and foundation rock types? If so, how can I get a copy of it?

-CESPN-ET

Response: Over the last 5 years, I have personally been involved with leakage remediation at the following sites:

Cerrillos, PR:	siltstone & tuff foundation; original multi-line curtain
Red Rocks, IA:	siltstone with gypsum beds; original grout curtain
Beaver, AR:	dolomitic limestone; multi-line curtain
Dworshak, WA:	granite gneiss; ungrouted portions
W.F. George, AL:	coquina limestone; ungrouted portions
Patoka, IN:	dolomitic limestone; ungrouted portions (no closure)
Mississinewa, IN:	dolomitic limestone; ungrouted portions (no closure)
Center Hill, TN:	dolomitic limestone; multi-line curtain
Mill Creek, WA:	conglomerate; partial grout curtain

The above - which I just put together - is the only comparative report in existence on leakage remediation beneath Corps dams. Other than Cerrillos (1992), I don't know the years these projects

were put into service, but that info is readily available. I know there have been previous leakage remediation projects (Wolf Creek), but I have no comparative info on them.

-Mike Klosterman

Continuing Discussion: Thank you Mike. I have been involved with the foundation grouting of two rock fill dams and one earth embankment dam during the 1970's and very early 1980's on non-karstic foundations. Three-line grout curtains were used on each, and the grout curtains were placed as permanent barriers to reduce seepage, not to prevent it. In addition to detailed foundation preparation and treatment, appropriate filter and drain blankets were constructed to intercept drainage and conduct it down stream out of the foundation area. I agree with Hornbeck's response and would like to emphasize that grouting is a tool and should never be relied on to be 100% effective to control seepage; additional measures such as properly designed filter and drain blankets should be employed to ensure seepage control. It is also important to be able to monitor the volume of seepage exiting the downstream toe of the dam for significant changes. To date I have not heard or am aware of any problems due to increased seepage at those projects; however, I suppose that it probably too early yet - - not quite thirty years for the first one -- to make any conclusions on the durability of the grout curtains for the three projects.

It is interesting that of the nine projects that you listed, five involved limestone foundation and of those five three had problems with ungrouted portions. In addition to those five, two projects had non-karstic bedrock with an ungrouted portions or a partial grout curtain and one, Red Rocks, IA, is indicated as not sure if there was an original grout curtain. Based on the above, the problems seem to be mainly associated with limestone foundations or incompletely grouted foundations. I am not positive, but I think that Wolf Creek Dam also has a limestone foundation. Do you know if there have been any comprehensive case studies by other governmental agencies, or by private or professional organizations (for example ACI Committee 552) on this subject?

-CESPN-ET

Response: I know of no comprehensive case study on the long-term effectiveness of grout curtains, probably because everyone expects them to last forever. It is only now that we are beginning to see that some are experiencing problems.

Red Rocks had an initial grout curtain, I just don't know whether it was single or multi-line (project completed in 1969).

I was always taught (and still believe) that there is no such thing as a 100% positive cut-off with a grout curtain; there will always be some water that gets through. But when enough water with enough head/gradient gets through to do damage to the structure or the unconsolidated portion of the foundation, then the grout curtain isn't performing as designed. The installation & maintenance of backup features such as relief wells and horizontal drains are as important as the grout curtain. Robin Fels has indicated that a large percentage of dam failures occur due to seepage and piping through this unconsolidated portion of the foundation. Several mechanisms exist that can cause this foundation piping, the most common being an ineffective grout curtain. You are also right-on in your comment about monitoring seepage downstream - a point that needs continual emphasis with the present state of our periodic inspection program.

I believe that grout curtain problems are more prevalent in carbonate environments because paleo karst features are filled with clay or other sediments that are difficult to grout. If a limestone foundation had

no sediment infilling, I don't think it would be any worse than granite (of course where can you find limestone with no sediment filled fractures & joints). Yes, Wolf Creek was a limestone foundation; the most accepted culprit being large horizontal & vertical clay-filled fractures & joints that were not removed or properly isolated during construction.

-Mike Klosterman

POC: MIKE KLOSTERMAN, CECW-ETV, 202-761-8682

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ENGINEERING SIGNATURE AUTHORITY

Continuing this discussion from the August issue of the E&C News.

Response from CELRL: Was reading the recent newsletter. Recalled information from my past life in A/E Contracting.

Also, I thought we were required by regulation to select only A/E's that have registration or registration capabilities for our work because we want to hold them to the same level of professionalism we expect from our own employees.

See ER 1110-1-8152 for the Corps philosophy.

See also ETL 1110-3-447, and FAR, Part 36, subparts 36.102, 36.601, 36.602, 36.609, et al.

Reply: Your statement concerning selection of A/E's that have registration or registration capabilities is correct. The discussion in August dealt with Corps in-house employees and the problems that some Districts are having due to restructuring when several divisions including Engineering, Operations, and/or Planning have been combined into a single office.

POC: CHARLES PEARRE, CECW-EIS, 202-761-4531

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USACE ENGINEERING RELATED COMMITTEES

Question from CESPL: There are several standing committees, advisory groups, etc that we have in the Corps related to Engineering subjects. I know of some topics such as CADD, Specifications, Sedimentation, Water Control Management Information Systems, and I'm sure there are many more. The committees and groups are populated with staff from HQUSACE, MSC's and Districts. Is there a complete list of all such committees, what their mission is and who the members are? I'd like to see such a list. It would help me know what committees and groups are active and how we could contribute to and benefit from these groups.

Response: At this time E&C Division does not have a consolidated list of the committees. We are working on such a list and will publish it in the near future. So now, here is a list of some of the known committees.

USACE Facilities Standardization Committee (see ER 15-1-25)

USACE Construction Contractor Performance Review Team (CCPRT) (see ER 15-1-29)

USACE Committee on Cost Engineering (see ER 15-1-36)

USACE Specifications Steering Committee (CSSC) (see ER 15-1-41)

Mississippi River Water Control Management Board (see ER 15-2-13)

USACE Committee on Tidal Hydraulics (see ER 15-2-14)

USACE Committee on Channel Stabilization (see ER 15-2-14)
USACE Committee Water Quality (see ER 15-2-14)
USACE Committee Hydrology (see ER 15-2-14)
CADD/GIS Center Committees (Field Users Groups, Other Agencies, SES Level Board of Directors)
Corps Senior Advisory CADD/Field Advisory CADD (SAC/FAC) (selected chiefs of engineering and CADD users)
Civil Works Research and Development Committees (SESers at HQ, Monday Morning Gang, Field User Groups for each Program, etc.)
Federal Geographic Data Committee (FGDC) (Political Appointees/SES Level Steering Committee, Interagency Thematic Subcommittees, etc.)
Geospatial Data and Systems Groups (HQ level and Field level)
RMS Field Advisory Users Group (to be established)
HQ Metric Committee
GPS Interagency Steering Committee
HQUSACE Dam Safety Committee (and subordinate command committees) (see ER 1110-2-1156)
Interagency Committee on Dam Safety (ICODS)
USACE Dam Safety Working Group
USACE Value Engineering Advisory Committee

Again, one thing that can be said about this list is that it is not complete. A more complete list will be issued at a later date.

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(Editors' note: If you want to share your thoughts with our readers regarding a subject of general interest, send an email to the E&C News editor at charles.pearre@usace.army.mil. A synopsis of your comments will be published next time).

Editors' Notes

SUBSCRIBE TO ECNEWS

Engineering and Construction News uses a subscription list on the Corps List Server. The name of the list is LS-ECNEWS. The purpose of the list is to distribute the Engineering and Construction community newsletter, *Engineering and Construction News*.

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If you have any questions about the list server, see the List Server E-Mail Delivery System web page at <http://eml01.usace.army.mil/other/listserv.html>. Or you may contact Charles Pearre if you have additional questions on the subscription list.

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